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CLAIMS

1. An apparatus for providing reserved connections between end stations, in a network capable of providing prioritized communications, comprising:
 - 5 a switch in packet communication with the end stations, the switch adapted to detect and forward packets that contain prioritized data for priority processing, and packets that include requests for reserved connections according to a given reservation protocol, the switch having a plurality of output queues associated with egress ports of the switch that correspond to different priorities associated with received priority packets, and at least one additional
 - 10 output queue associated with reserved connection data packets, wherein the switch is operable for, in response to a reserved connection request, determining whether there is sufficient bandwidth available to establish a reserved path within the network, and if so, allocating the bandwidth for the requested reserved connection, and for, in response to each packet received at the input of the switch, determining whether the packet is associated with the reserved
 - 15 connection and forwarding those packets to the additional output queue on the egress port associated with the reserved connection path for transport to the intended destination.
2. The apparatus of claim 1, wherein the network comprises an ethernet network.
- 20 3. The apparatus of claim 1, wherein a plurality of said switches are coupled to one another in cascading fashion between the end stations for providing the reserved connection path there between, each switch operable for receiving a reserved connection request, determining and allocating its own available bandwidth, and forwarding the reserved connection path request to the next downstream switch.
- 25 4. The apparatus of claim 1, wherein the switch determines which egress port is associated with the reserved connection based on an internal mapping table.
- 30 5. The apparatus of claim 4, wherein the switch is operable for forwarding the reserved connection request to all output ports when the internal mapping table does not include the requested destination address.

6. The apparatus of claim 3, wherein when one of said switches determines insufficient available bandwidth, said one switch is operable to generate a signal indicating denial of bandwidth allocation back toward the requesting device.
- 5 7. The apparatus of claim 1, wherein the switch operates at one of service layer 2 and service layer 3.
8. The apparatus of claim 1, wherein the reservation protocol is RSVP.
- 10 9. In an ethernet network system comprising a plurality of ethernet end stations, a switch for communicating packets of information between at least two of the end stations, the switch comprising:
- 15 an input for receiving packets from one of the at least two end stations;
a plurality of output queues associated with egress ports that correspond to different priorities associated with received priority packets, and at least one additional output queue associated with reserved connection data packets,
- 20 a packet sorter responsive to each of the packets received at the input, for determining at least one of a) packet type; and b) packet priority, and placing each packet in a corresponding output queue corresponding to the priority of the packet when the packet type received is a priority type, and for placing received reserved connection data packets on the at least one additional output queue when the packet type received is a reserved connection type,
- 25 a detector for detecting whether the received packet includes a request for a reserved connection according to a given reservation protocol, and
an allocator responsive to the detection of a request for a reserved connection, for determining and allocating sufficient bandwidth for establishing the reserved connection between the endpoints.
- 30 10. The system of claim 9, wherein a plurality of switches are coupled to one another in cascading fashion between the end stations for providing the reserved connection path there between, and wherein each switch is operable for receiving a reserved connection request forwarded from an upstream device, determining and allocating its own available bandwidth, and directly forwarding the reserved connection path request to a next downstream device according to its own internal mapping table.

11. The system of claim 10, wherein each switch examines at least one of MAC address information and IP address information of each packet for processing said packet.

12. The system of claim 11, wherein the switch compares the input packet address information with pair addresses stored in memory, and wherein, if the pairs match, indicative of a reserved connection packet, the particular packet is sent to the at least one additional output queue.

13. A method for providing a reserved connection between end stations, in a network capable of providing prioritized communications, comprising:

detecting in a first device prioritized packets and packets that include requests for reserved connections according to a predetermined reservation protocol;

forwarding the prioritized packets;

determining, in said first device, whether sufficient bandwidth associated with said first device is available based on the detected request for a reserved connection; and, if so, establishing a path between the end stations and reserving resources along the path to provide the requested reserved connection along the path, including allocating an output queue within said first device for said reserved connection data packets.

14. The method of claim 13, further comprising parsing in said first device header information including ethernet address, IP address, and TCP address information for determining whether the received packet is a bandwidth reservation request message.

15. The method of claim 14, wherein MAC addresses are stored and compared with packet information for determining reserved connection stream packets and end station devices on a homogeneous ethernet network.

16. The method of claim 14, wherein IP addresses are stored and compared with packet information for determining reserved connection stream packets and end station devices on a heterogeneous network.